

Application Number 10/781,245

Amendment in response to Office Action mailed June 15, 2009

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Previously Presented): An implantable device comprising:

a feedthrough assembly partially disposed within a hermetically sealed housing of the implantable device said feedthrough assembly including:

a sleeve outer portion hermetically bonded to the housing;

a thermal insulator disposed within the sleeve outer portion;

a pin spaced from the housing and at least partially disposed within the thermal insulator, wherein a portion of the pin is configured to be exposed to an external medium; and

a temperature sensor disposed within the pin, wherein a physical parameter of the external medium is sensed through the pin by the sensor and correlates to the temperature of the external medium.

Claim 2 (Previously Presented): The device of claim 1, wherein the implantable device is pacemaker, or cardioverter-defibrillator.

Claim 3 (Original): The device of claim 1, wherein the implantable device is a lead.

Claim 4 (Original): The device of claim 1, wherein the pin includes an hollow interior and the temperature sensor is disposed within the hollow interior.

Claim 5 (Original): The device of claim 4, wherein the temperature sensor is in contact with an interior surface of the pin.

Claim 6 (Original): The device of claim 4, further comprising a thermal barrier disposed within the hollow interior and isolating the temperature sensor from an interior of the housing.

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Claim 7 (Original): The device of claim 6, wherein the thermal barrier extends beyond the hollow interior of the pin and into the interior of the housing.

Claim 8 (Original): The device of claim 1, further comprising a sleeve inner portion disposed between the pin and the thermal insulator.

Claim 9 (Currently Amended): An implantable device including a feedthrough assembly disposed within a hermetically sealed housing of the implantable device comprising:

means for sensing a physical parameter disposed within a pin; and

means for hermetically sealing the pin to the housing, wherein the pin extends through an opening in the housing such that at least a portion of the pin extends outside of the housing.

Claim 10 (Original): The device of claim 9, wherein means for sensing is a temperature sensor.

Claim 11 (Previously Presented): A feedthrough assembly comprising:

a sleeve positionable within an opening through a housing of an implantable medical device and hermetically sealable to the housing;

an insulator disposed within the sleeve and hermetically sealed thereto;

a pin disposed within and hermetically sealed to the insulator, the pin including a hollow, fluid filled interior, a first membrane configured to be exposed to an external medium, and a second membrane adapted to be coupled with a sensor positionable within the housing, wherein a physical parameter of the second membrane is sensed by the sensor and correlates to a pressure within the external medium.

Claim 12 (Previously Presented): The feedthrough of claim 11, wherein a surface area of the first membrane is smaller than a surface area of the second membrane.

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Claim 13 (New): An implantable device comprising:
a hermetically sealed housing; and
a feedthrough assembly disposed in an opening in and hermetically sealed to the housing,
the feedthrough assembly comprising a sensor assembly arranged in the opening such that at
least a portion of the sensor assembly extends outside of the housing.

Claim 14 (New): The device of claim 13, wherein the sensor assembly is configured to
sense one or both of temperature and pressure.

Claim 15 (New): The device of claim 13, wherein the sensor assembly comprises:
a pin at least partially disposed within the opening in the housing; and
a temperature sensor disposed within the pin.

Claim 16 (New): The device of claim 13, wherein a portion of the pin within which the
temperature sensor is disposed extends outside of the housing.

Claim 17 (New): The device of claim 15, wherein the feedthrough assembly further
comprises:
a sleeve outer portion hermetically bonded to the opening in the housing; and
a thermal insulator disposed within the sleeve outer portion;
wherein the pin is at least partially disposed within the thermal insulator.